



Contribution ID: 1005

Type: Parallel Talk

## Leptogenesis from a feebly interacting dark matter sector

*Friday, 8 July 2022 09:15 (15 minutes)*

We perform an analysis of leptogenesis in the context of a simple extension of the Standard Model with two fermions, one charged ( $\chi$ ) and one neutral ( $\psi$ ), in addition to three right-handed neutrinos, interacting through a charged gauge singlet scalar  $S$ . The dark sector ( $\chi$ ,  $\psi$  and  $S$ ) interacts feebly and produces a relic density consistent with the existing data. The right-handed neutrinos decay into the charged scalar  $S$  and a lepton, providing an additional source of CP asymmetry, along with contributing through the virtual exchange of  $S$  in the standard decay channel. The advantage of this scenario is that it can generate naturally the observed baryon asymmetry of the universe, even for right-handed neutrino masses in 10 TeV region, without requiring neutrinos to be degenerate.

### In-person participation

Yes

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**Session Classification:** Dark Matter

**Track Classification:** Dark Matter